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HTA/MSB/10/58
8 March 1958

Memorandum for: Chief, HTAUTOMAT
From : Deputy chief, HTA/MSB
Subject : Comments on 5 March Briefing

1. Although familiar with the materials you covered in your briefing, I was most impressed by the smooth flow of the presentation, and I wish to thank you for the opportunity of sitting in on it.
2. Knowing that you want to be kept up to date on all substantive points, and realizing that many changing theories and facts may escape your attention through inadvertance, I respectfully offer the following:
 - a. TYURA TAM - According to the consultants and the SAPs, the facility between the logistic area and the launch area is in all probability something more than a mere LOX plant. In fact, they stated that if it were a LOX plant, it had been over-engineered as far as water supply is concerned by a factor of between 100-1 and 1000-1. It is of interest to note that large quantities of water are required for production of some of the more exotic fuels, such as flourine. However, the consultants would not definitely commit themselves to a statement that the facility did in fact represent an exotic fuel production facility.
 - b. RAIL-LAUNCHED MISSILES - Although considerable interest has been expressed in the intelligence community in regard to the possible siting of IRBM and/or ICBM launch positions along rail lines, especially rail spurs, in the USSR, still it is worth noting that U.S. scientific thinking along this line holds that no such prior preparation of the launching site is necessary. They feel that all that is necessary is a surveyed point, perhaps marked by a special spike in a tie, or other suitable marker. It is also worth noting that the Soviets are not too dumb, and that they might expect us to make inferences, just as we have done. With that in mind, they might well construct a rail spur leading off into the woods as a decoy. When the time comes, we might very carefully neutralize dozens of worthless rail spurs, while the missiles roar up from points along main rail lines.
 - c. VOZROZHENIYA ISLAND - There is only one cruciform test site on the island.

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d. TYURA TAM - The collimation towers on the launch platform at Tyura Tam probably consist of a series of mirrors, with no electronic connotation whatever. All-inertial guidance would require very precise positioning and extremely meticulous precision in aligning the vertical axis of the missile at right angles to the magnetic lines of force. It is highly probable that such precision could only be accomplished with mirrors. Therefore it is suggested that the towers not be called antennas.

e. LUGOVOYE A/F - There has been much discussion about the possibility of using Lugovoye as a skid strip, either for cruise missiles or skip-glide vehicles, or both. One of the principal arguments against this possibility is that the runway is not concrete or other hard surface. In order to recover missiles successfully, so that they can be used again, our people at Cape Canaveral have surfaced the strip with finely-compacted gravel bound together with asphalt. The result is a very hard surface, much more solid than the ordinary concrete road -- and yet it has considerable fluidity under impact of missile landings. The reason for needing solid footing is that, when skidding a vehicle into a landing it is very difficult to keep it from digging-in. Landing on a dirt strip would probably result in nose-ups, cartwheels, and in general complete wreckage of the vehicle. At the Cape, they solved the problem of length of skid by laying out a high anchor-type chain in a large U pointing toward the direction of flight. A hook on the vehicle snags the chain much as a plane does in a carrier landing. You can readily see that the placement of the chain is such that a steadily increasing drag is brought to bear on the vehicle, resulting in a smooth, quick stop. After the landing is complete, the chain will be in the shape of a W, with the vehicle at the mid-point of the W, or in the shape of a U pointed in the opposite direction from the way it was originally laid out.

3. PRONUNCIATION OF CHINESE NAMES - I fully realize that the sounds of Chinese names cannot be duplicated precisely except by a careful student of the language, but one hears close approximations frequently in the intelligence community. I have noticed particularly that [redacted] and [redacted] unlike their compatriots from [redacted] are quite good in their pronunciations of Chinese place and proper names. The two that you used were Sinkiang and Ti Hua. Closest approximation that I know to the Chinese sounds would be SIN JUNG and TEA IHWAH. I know this is unimportant, but I thought you might be interested.

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